

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

Timö K Korpela
Kraatarinkatu 1 D 42
20610 Turku
Finland

PCT

WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY
EXAMINING AUTHORITY

(PCT Rule 66)

Date of mailing (day/month/year) 28-11-2005	
Applicant's or agent's file reference MF3	REPLY DUE within 60 days from the above date of mailing
International application No. PCT/FI2004/000766	International filing date (day/month/year) 17-12-2004
Priority date (day/month/year) 22-12-2003	
International Patent Classification (IPC) or both national classification and IPC See Supplemental Box	
Applicant Vitaly Dzhavakhia et al	

1. ☒ The written opinion established by the International Searching Authority:

☒ is
☐ is not

considered to be a written opinion of the International Preliminary Examining Authority.
2. This second (first, etc.) opinion contains indications relating to the following items:

☒ Box No. I Basis of the opinion
☐ Box No. II Priority
☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐ Box No. IV Lack of unity of invention
☒ Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐ Box No. VI Certain documents cited
☐ Box No. VII Certain defects in the international application
☒ Box No. VIII Certain observations on the international application
3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(c).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis. For an informal communication with the examiner, see Rule 66.6. For an additional opportunity to submit amendments, see Rule 66.4.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary report on patentability (Chapter II of the PCT) must be established according to Rule 69.2 is: 22-04-2006

Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 46 8 667 72 88	Authorized officer Ida Christensen/Els Telephone No. 46 8 782 25 00
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Form PCT/IPEA/408 (cover sheet) (April 2005)

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Applicant:
Vitaly Dzhavakhia et al

1. ☒ The written opinion established by the International Searching Authority:
☒ is ☐ is not
considered to be a written opinion of the International Preliminary Examining Authority.
2. This second (first, etc.) opinion contains indications relating to the following items:

<input checked="" type="checkbox"/> Box No. I	Basis of the opinion.
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application
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Ida Christensen/Els
Telephone No. 46 8 782 25 00

Form PCT/IPEA/403 (cover sheet) (April 2005)

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WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

International application No.

PCT/FI 2004/000766

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____
which is the language of a translation furnished for the purposes of:
☐ international search (Rules 12.3(a) and 23.1(b))
☐ publication of the international application (Rule 12.4(a))
☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this opinion has been established on the basis of (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."*):

- ☒ the international application as originally filed/furnished
☐ the description:
pages _____ as originally filed/furnished
pages _____ received by this Authority on _____
pages _____ received by this Authority on _____
☐ the claims:
pages _____ as originally filed/furnished
pages _____ as amended (together with any statement) under Article 19
pages _____ received by this Authority on _____
pages _____ received by this Authority on _____
☐ the drawings:
pages _____ as originally filed/furnished
pages _____ received by this Authority on _____
pages _____ received by this Authority on _____
☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

**WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY**

International application No.

PCT/FI 2004/000766

Box No. V	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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1. Statement

Novelty (N)

Claims

1-10

Claims

Inventive step (IS)

Claims

1-2. 5-10

Claims

3. 4

Industrial applicability (IA)

Claims

1-10

Claims

2. Citations and explanations:

The present application relates to the polypeptide MF3 from *Pseudomonas fluorescens* which confers resistance of plants to microbial diseases and/or to attack of plant parasites. A method of isolating and purifying MF3, the DNA sequence encoding MF3, vectors and host cells, a composition comprising MF3 (or an active fragment or a functional derivative thereof) and a method of acquiring resistance of plants to microbes and parasites are described.

Reference will be made to the following documents cited in the International Search Report:

D1) Database Uniprot [Online], accession no. Q887W2, 1 June 2003, retrieved from EBI.

D2) Database Uniprot [Online], accession no. Q9I5A3, 1 March 2003, retrieved from EBI.

D3) US 6528480 B1

D4) Plant Science, 152: 123-134 (2000), Godoy A. V. et al.

D5) Abstracts of the General Meeting of the American Society for Microbiology, 102: 314, abstract no. N-53, Spencer M. & Anderson A.

D1 discloses an amino acid sequence which has 89,4% identity with SEQ ID NO:1 of claim 1.

D2 discloses an amino acid sequence which has 86,96% identity with SEQ ID NO:1 of claim 1.

Neither in D1 nor in D2 is it disclosed that the amino acid sequence, which sequence is very similar to SEQ ID NO:1, could render a plant resistant to microbial disease or attack of

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX V

D3 describes an MF2 protein derivable from *Bacillus thuringiensis* and the use of said protein as plant protectant.

D4 relates to cyclophilins which have an enzymatic activity of peptidyl-prolyl cis-trans isomerase and which are thought to be involved in plant response to environmental stresses.

Through D5 it is known that the *Pseudomonas* inhibits the growth of several plant pathogens and therefore has potential as a biocontrol agent.

Documents D1-D5 represent prior art and are not considered to be relevant for the assessment of novelty and inventive step of claims 1-10.

The invention according to claims 1-10 is novel and is industrially applicable.

In the present claim 3, the expression "the bioactive polypeptide MF3" is not sufficiently defined (see also Box VIII). The method according to claims 3 and 4 must be restricted to the introduction of the bioactive polypeptide MF3 which has the specific amino acid sequence of SEQ ID NO:1 (or an active fragment or a functional derivative thereof) in order to fulfil the requirement of inventive step for the entire scope of said claims.

The wording of claim 8 should correspond to the wording used in claim 1. The expression "isolated components" is ambiguous and unclear. In order to specify the subject-matter of claim 8 the wording of claim 1 should be introduced into the claim. It is however also desirable to keep the present indication in the claim that the bioactive polypeptide MF3 of SEQ ID NO:1 (or an active fragment or a functional derivative thereof) is isolated.

The invention according to claims 1, 2 and 5-10 fulfils the requirement of inventive step.

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International application No.

PCT/FI 2004/000766

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The term "the bioactive polypeptide MF3" used in claim 3 is vague and undefined and leaves the reader in doubt as to the meaning of the technical features to which it refers, thereby rendering the definition of the subject-matter of said claim unclear (Article 6 PCT).